Monthly Report

April 2017

Carnivore Research Malawi

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Leopard kill sighting

The CRM team was incredibly lucky to have this amazing leopard (*Panthera pardus)* sighting in April. On the way back from checking camera traps the team spotted a leopard cub in the bracken by the side of the road. After the cub had slinked off into the woodland they proceeded up the road to find the mother leopard carrying a bushbuck (*Tragelaphus scriptus*) back to the cub, (Figure 1). The bushbuck was still alive and the mother released the bushbuck to teach the young cub how to kill food. The cub played with it for a moment before finally delivering the killer bite to the bushbuck.

Figure 1. Female leopard, NNP001, dragging the bushbuck carcass back to her cub.

After dragging it into the bushes the pair were not seen again. However, this amazing experience left the CRM team in awe whilst also providing us with valuable data on leopard prey selection and our first leopard ID for our database.

Welcoming Alexandra to the Nyika team

CRM would like to welcome Alexandra Kahler to our Nyika research team. Alex joins the team after having just finished her degree in Environmental Science at Washington State University. In 2016 Alex spent time in Malawi in Liwonde National Park, where she assisted on the black rhino research monitoring team.

Figure 2. Alex during her time with rhino project in Liwonde National Park.

Prior to this Alex has also spent time in South Africa and has extensive experience of research and habitat restoration projects in the USA. Alex is looking forward to working with carnivores and we are happy to have her on board at our Chelinda Research station.

Nyika NP—Opportunistic carnivore sightings for April 2017

Nyika NP is a new study site for the team so much of the time was spent exploring the park and testing possible transects. On these explorations we had three separate leopard sightings, three jackal sightings, and one serval.

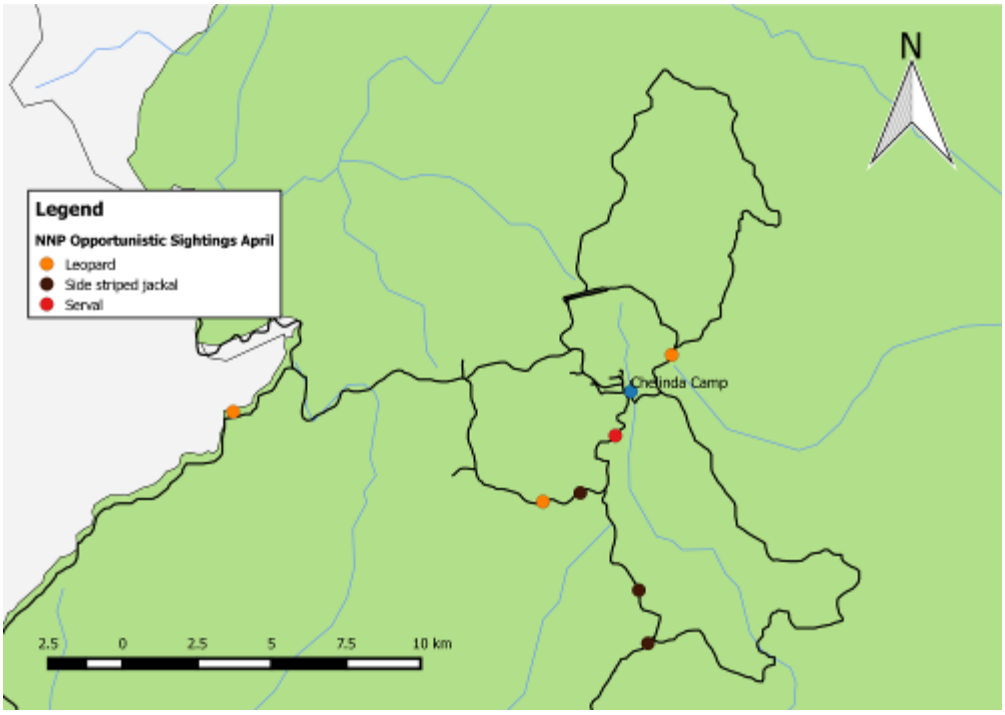

Figure 3. Opportunistic carnivore sightings for Nyika National Park, April

Nyika NP—Camera trap findings for April 2017

Despite camera traps set up along many trails, the month of April proved to be quite uneventful in terms of photo captures of carnivores. Many of the camera locations were chosen based on past reports from DNPW officers and guides as well as the presence of wildlife signs such as spoor, scratch marks, and scats. We hope that the month of May brings better results.

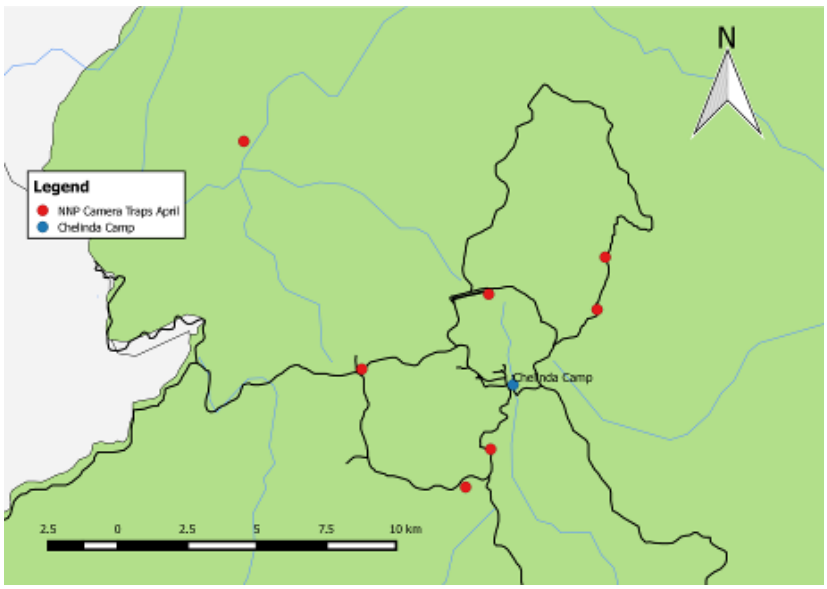

Figure 4. Camera trap placement for April 2017 in Nyika National Park.

Nyika NP - Large mammal and spotlighting transect summary April 2017

As Nyika is a new station for the team there are only a handful of transects so far. This month, LMT4 was created from the airstrip to the north and LMT5 from the TNM tower along a rarely used road to the north towards the Dembo River. One large mammal transect produced 130 animals which was very encouraging.

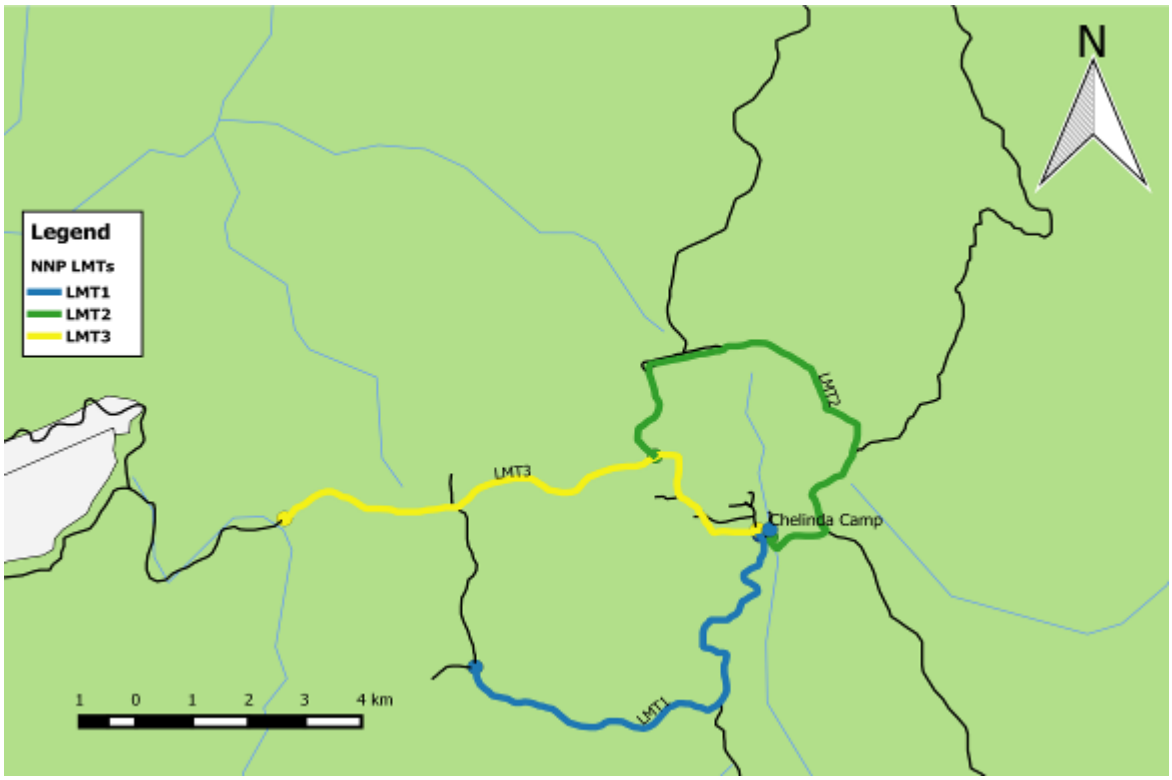

Figure 5. Large mammal transects conducted in Nyika National Park during April 2017.

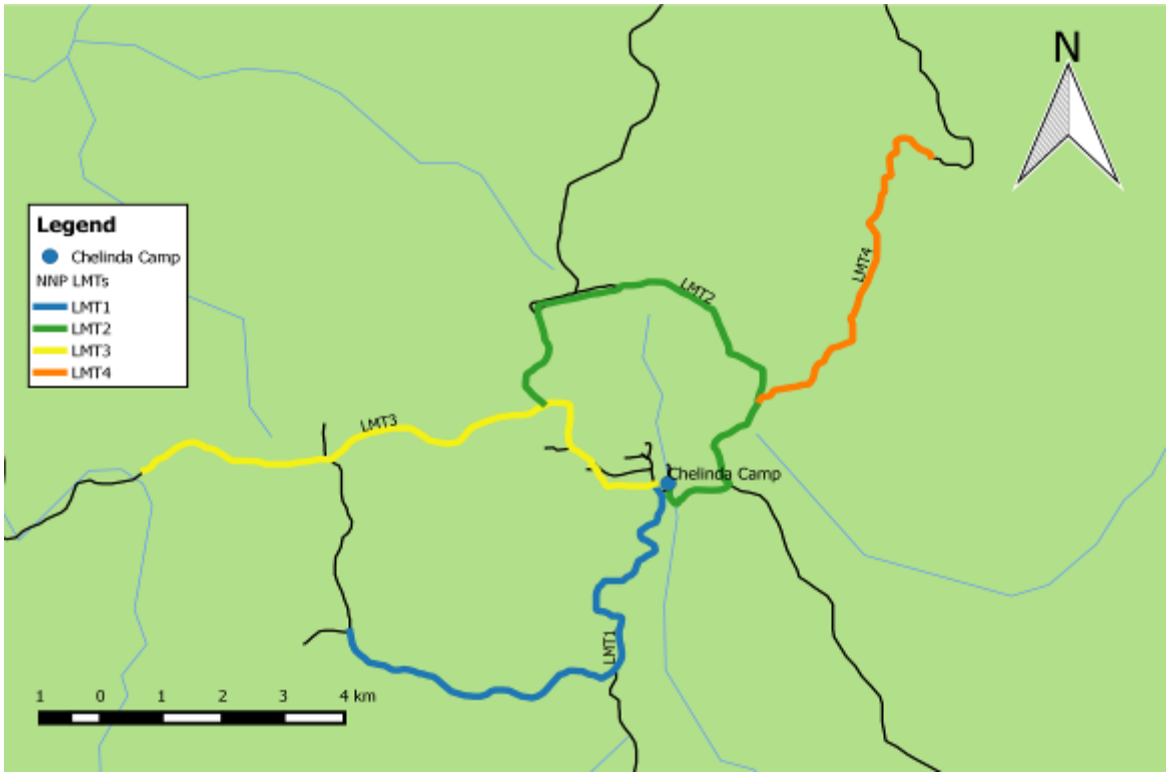

Figure 6. Spotlighting transects conducted in Nyika National Park during April 2017.

CRM findings—Lilongwe Field Station

The Return of URBHY03

Around mid-March, an unknown spotted hyaena (*Crocuta crocuta*) began appearing in images at various camera trapping stations all over Lilongwe. We had trouble identifying this individual because

Figure 7 This image was used to identify URBHY03 after a month of sightings

we were unable to obtain an image that matched the spot pattern on the hyaena ID database. Every hyaena has a unique spot pattern that develops at three months; as the hyaena grows the spots spread out and lighten but the overall pattern remains virtually the same. Sometimes identification difficulties arise when only capturing one side of the hyaena or when we are incapable of documenting the progression from cub to adult. After collecting a camera at State House, the team finally matched an image from April 12th to the spot pattern belonging to URBHY03, who hadn't been seen since December 2015 (Figure 7). We were elated to see this hyaena after over a year and we updated its left side spot pattern on the ID database since it lacked the image beforehand.

Urban Carnivore Biodiversity

Although the majority of our research conducted in the city is focused on the urban ecology of spotted hyaena's, we also are measuring the amount of diversity by monitoring other species of carnivores through images and sightings.

Additionally, domestic dog (*Canis lupus familiaris*) and domestic cat (*Felis catus*) are

Figure 8. A skull of a dog found at a den site. The urban hyaena clan commonly preys on the stray dog population.

included in the carnivore record because as mid-level carnivores, they prey on smaller mammals, and feed the large carnivores in an urban environment as we have recovered dog skeletons from the hyaena den sites (Figure 8).

Figure 9. A side-striped jackal investigating a bait site (LIL_B07) AT State House.

Camera trapping is a highly effective method for surveying more cryptic carnivores including side-striped jackal (*Canis adustus*) (Figure 9), rusty-spotted genet (*Genetta maculata)* (Figure 10), and bushy-tailed mongoose (*Bdeogale crassicauda*). It is especially exciting to see multiple species in the same area as we are compiling a complete list of carnivores that inhabit Lilongwe.

Figure 10. A rusty-spotted or large-spotted genet seen perusing in an urban ravine.

Lilongwe Wildlife Centre Activity

Our partners at the Lilongwe Wildlife Centre (LWC) had lots of hyaena activity throughout the month of April. We received reports of hyaena tracks around the hyaena enclosure at LWC early in the month and decided to set-up a camera trapping location there. The camera captured one image of a hyena passing by the cage, but nothing more. Towards the end of the month, more accounts of tracks and even a sighting of three individuals came to us from LWC employees. We decided to place a camera outside of the Lions' enclosure and a bait site along with another camera station at the entrance of the Wilderness Trails to monitor their exact movements around the property. After two days, the camera already captured multiple hyaena's (URBHY01, URBHY02, URBHY08) (Figure 11), as well as a side–striped jackal. This information is important to our research since we are trying to capture some of the clan members to exchange their collars for new ones. With assistance from vets at Wildlife Vets International we are to attempt hyaena captures in the coming months to remove and replace collars and to box-trap jackal or genet to collar new carnivore species. We would like to thank the LWC for their assistance on all of our work at their site the past month.

Diet Analysis Update

Figure 11. URBHY01(front) and URBHY08 seen at the bait site (LIL_B15) in the Lilongwe Wildlife Centre

This month, we've continued our efforts of processing carnivore scats from all of our research camps. We try to sort a variety of species' scats, depending on availability. The team washed and sorted a variety of scats: two from Liwonde, a serval (*Leptailurus serval*) and spotted hyaena, two scats from Kasungu, both spotted hyaena, and one urban spotted hyaena. The serval scat (LWD_SV01) was most interesting to sort because we discovered an exoskeleton of most likely a crab as well as some sort of reptile claw (Figure 12).

Figure 12. Parts of a reptile claw (left) and crab exoskeleton found in a serval scat (LWD_SV01).

Lilongwe Camera Trapping Update

During April, 16 camera trapping stations were completed (Figure 13), with one camera still deployed and one camera unfortunately stolen. New camera trapping locations included the Lilongwe Wildlife Centre.

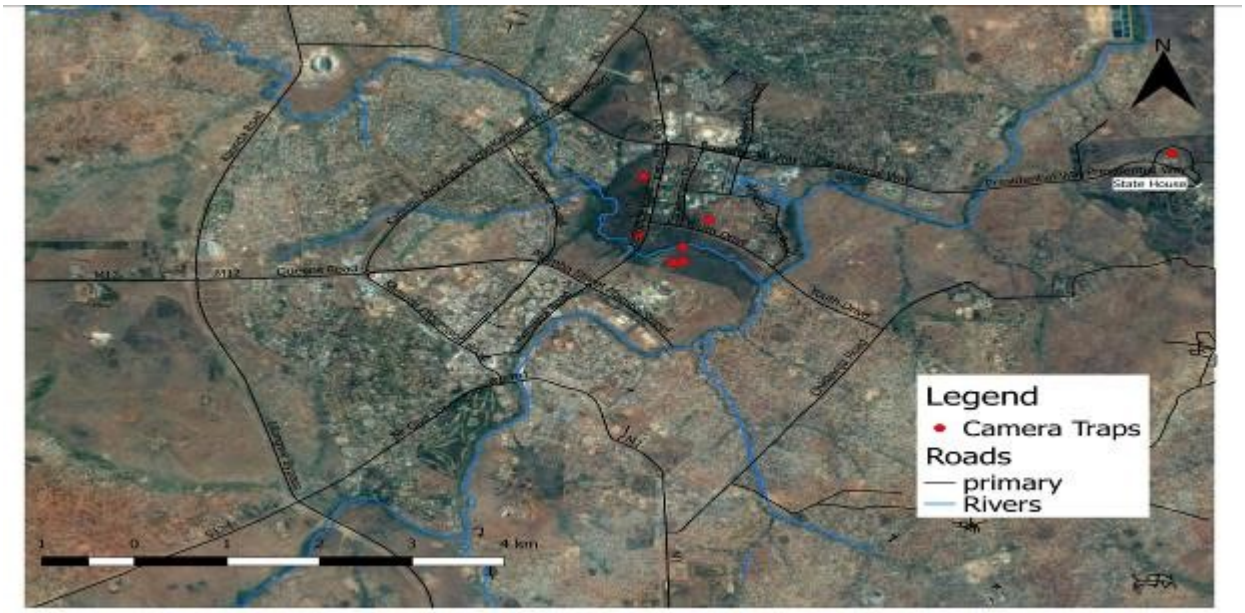

Figure 13. Camera trapping locations for April 2017 in Lilongwe.

Lilongwe Carnivore Sightings Update

Opportunistic carnivore sightings for April, (Figure 14), include both camera trap images and observations. Four spotted hyaena's were seen this month: URBHY01, URBHY02, URBHY03, and URBHY08. One new carnivore species, bushy-tailed mongoose, was documented.

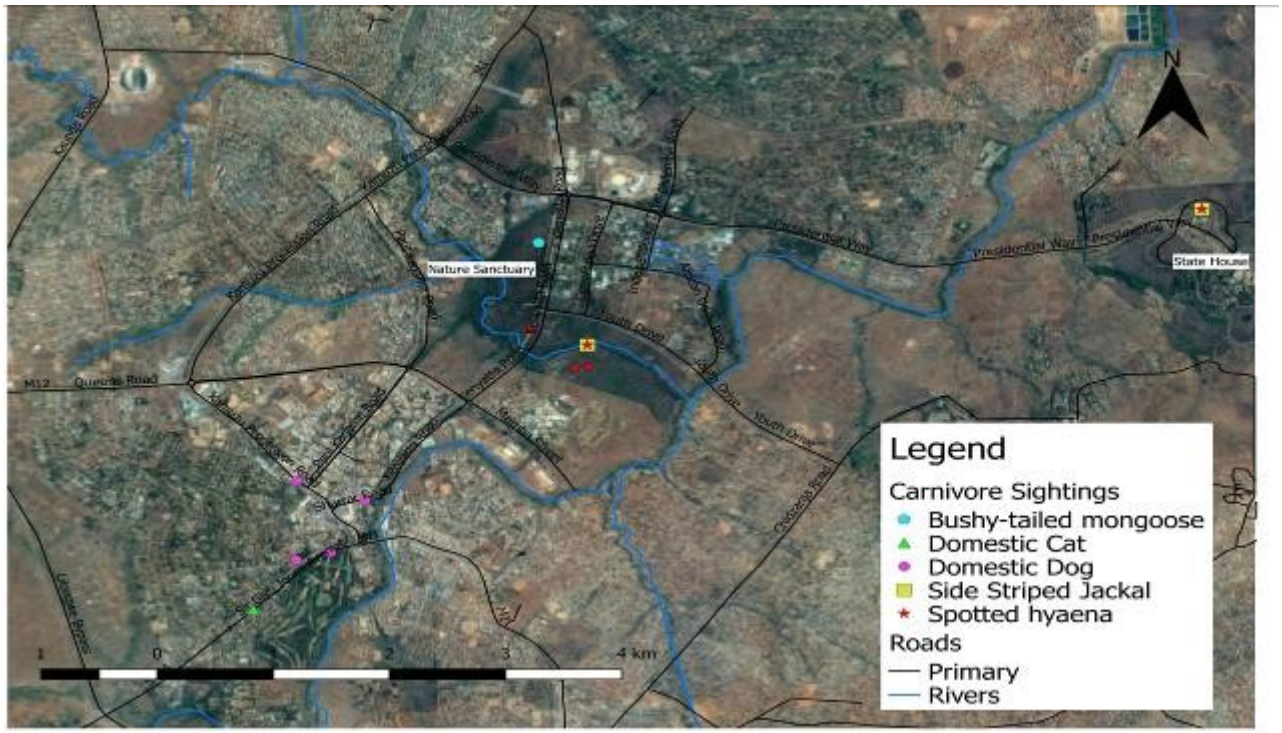

Figure 14. All carnivore sightings for April 2017 in Lilongwe.

CRM Funders and Supporters

CRM would like to thank all our funders and collaborators.

Range Wide Conservation Program for Cheetah & African Wild Dogs

University of Bristol

Nottingham Trent University

Cardiff University Prifysgol Caerdydd

Department of National Parks and Wildlife

Unity and Freedom

ICLEI Local Governments for Sustainability

Wildlife Vets International

Cleveland Zoological Society

people's trust for endangered species

Bringing the wild back to life

LWT Lilongwe Wildlife Trust

The Rufford Foundation www.rufford.org

CAN Conservation Action Now Oklahoma City Zoo

Kumbali Country Lodge

bertdog creative

Central African Wilderness Safaris In Malawi since 1987

airtel

African Parks

freedcamp

AGS Frasers International Movers

Appendix I: Mammals of Kasungu National Park. Nyika National Park and Lilongwe City.

All mammals seen on transects, camera traps, acoustic surveys or opportunistic surveys. Animals reported by a DNPW Parks staff member or CAWS representative and reported to CRM are marked with an asterisk (*).

			Kasungu NP	Nyika NP	Lilongwe City
Artiodactyla					
	Bovidae				
	Sylviacapra grimmia	Common duiker	X	X	X
	Raphicerus sharpei	Sharpe's Grysbok	X		
	Oreotragus oreotragus	Klipspringer	X	X	
	Redunca arundinum	Common reedbuck	X	X	
	Neotragus moschatus	Suni	X		
	Kobus vardoni	Puku	X		
	Hippotragus equinus	Roan	X	X	
	H. niger	Sable	X		
	Aepyceros melampus	Impala	X		
	Tragelaphus scriptus	Bushbuck	X	X	X
	Alcelaphus buselaphus lichtensteinii	Lichtenstein's hartebeest	X		
	T. srepsiceros	Greater Kudu	X		
	Taurotragus oryx	Common Eland*	X	X	
	Syncerus caffer	African cape buffalo	X		
	Suidae				
	Potamochoerus porcus	Bushpig	X	X	X
	Phacochoerus aethopicus	Warthog	x	X	
	Hippopotamide				
	Hippopotamus amphibius	Hippopotamus			
Perissodactyla					
	Equidae				
	Equus quagga	Common zebra	X	X	
Probiscidae					
	Elephantidae				
	Loxodonta africana	African Elephant	x	X	
Carnivora					
	Viverridae				
	Gennetta tigrina	Large spotted genet	X	X	
	Genetta genetta	Small spotted genet	X	X	X
	Civettictis civetta	African civet	X	X	X
	Mungos mungos	Banded mongoose	X	X	
	Ichneumia albicauda	White-tailed mongoose	X	X	
	Atilax paludinosus	Water mongoose	X	X	
	Herpestes sanguinea	Slender mongoose	X	X	X
	Bdeogale crassicauda	Bushy-tailed mongoose			X
	Hyaenidae				
	Crocuta crocuta	Spotted hyaena	X	X	X
	Felidae				
	Leptailurus serval	Serval	X	X	X
	Felis caracal	Caracal	X		X
	Felis domesticus	Domestic cat			X
	Panthera leo	Lion	X		
	P. pardus	Leopard	X	X	
	Canidae				
	Lycaon pictus	Wild dog*	X		
	Canis adustus	Side striped jackal	X	X	X
	Canis lupus familiaris	Domestic dog			X
	Mustelidae				
	Aonyx capensis	Cape clawless otter	X	X	
	Mellivora capensis	Honey badger	X	X	
	Ictonyx striatus	Striped polecat	X		
Primates					
	Cercopithecidae				
	Papio cynocapalus	Yellow baboon	X	X	X
	Cercopithecus aethiops	Vervet monkey	x	X	X
	Cercopithecus mitis	Blue monkey		X	
	Galagidae				
	Otolemur crassicaudatus	Greater bushbaby			X
Rodentia					
	Hystricidae				
	Hystrix africaeaustralis	Porcupine	X	X	X
	Leporidae				
	Lepus saxatilis	Scrub hare	X	X	X